



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

NOTES ON A MACKEREL SHARK, *Isurus Tigris* (ATWOOD), FROM NEW YORK.

ROBERT CUSHMAN MURPHY, Brooklyn Museum.

Plate 1.

Isurus dekayi Jordan and Evermann, 1896, Bull. 47, U. S. Nat. Mus., p. 48; 1900, idem., Atlas, pl. VI, fig. 21. Nichols and Murphy, 1916, Brooklyn Mus. Sci. Bull. III, No. 1, p. 22, fig. p. 23.

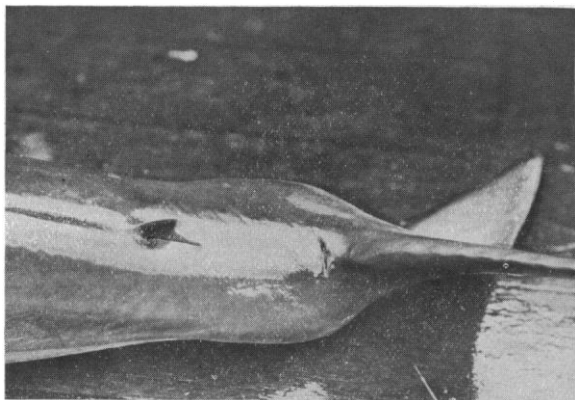
Isurus tigris Garman, 1913, Mem. Mus. Comp. Zool., XXXVI, p. 36. Radcliffe, 1914, Bull. Bur. Fisheries, XXXIV, p. 247 (issued April, 1916).

A less than half-grown female of this relatively little-known shark was caught on a bluefish line near the Ambrose Lightship, off New York Bay, on September 11, 1918, and was examined on the spot by the writer. The species is apparently familiar to New York fishermen under the name "blue shark," for members of the crew of a bluefish schooner pointed out its lunate tail and other features in which it differs from the commoner ground sharks (*Carcharhinus*). The stomach of the specimen contained a quantity of the remains of large bluefish (*Pomatomus saltatrix*). Before the capture of the shark, several bluefish of five or six pounds weight had been bitten in half after being hooked by the fisherman.

Garman has published a practical description of *Isurus tigris*, without an accompanying figure. He states that this shark attains a length of more than ten feet, and that its range extends from the Gulf of Mexico and the West Indies to New York. The figure published by Jordan and Evermann is slightly incorrect in proportions and more so in the form of the snout and of the pectoral, dorsal, and caudal fins. Radcliffe reports that the species has not been taken, at least of late years, on the North Carolina coast, and Nichols and Murphy in 1916 knew of no recent Long Island records. Photographs and figures of the teeth and denticles, of *Isurus tigris* have apparently not heretofore been published, although Garman's work contains both superficial and anatomical drawings of the related porbeagle (*Isurus punctatus*), which is assigned to a different subgenus.



1.



2.



3.

Fig. 1. *Isurus tigris*, ♀. The photograph shows the rounded extremity of the pectoral fin, the concealed inner angle of which is also rounded.

Fig. 2. Dorsal view of peduncle, showing the pronounced keel, 2d dorsal fin, superior caudal pit, crimped anterior border of supracaudal lobe, and part of the infra-caudal.

Fig. 3. Ventral view of head to show confirmation of snout and relations of nostril, eye, mouth, and 1st gill-cleft.

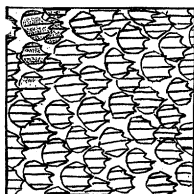


Fig. 1. Denticles of *Isurus tigris* on 1 square mm. of the back near 1st dorsal. Enlarged 25 diameters.



Fig. 2. The first 4 teeth from middle of jaws. The diminutive 3d tooth in the upper jaw is a character of the species. Reduced.

The New York specimen (Brooklyn Museum, No. 567 ♀), was of a dark, clear blue color above, and white below, the demarcation being sharply defined, as described by Garman. Upper surfaces of pelvic fins partly white and partly dark blue; blue of the gill-flaps lighter, almost silvery. Length of head to first gill-cleft (not the "fifth," as erroneously printed in Garman's monograph), nearly one-fourth of total length. Teeth in $\frac{26}{26}$ rows. Fifth gill-cleft hooked around anterior insertion of pectoral fin. Antero-dorsal border of supracaudal lobe "crimped" or laterally undulated throughout its length (Plate I, fig. 2). Supracaudal one-fourth longer than infracaudal. Posterior margin of supracaudal terminating in an accessory lobe about one-fourth the length of the fin and having an attenuated, frayed edge. In other respects the specimen agreed with Garman's description.

Measurements in Centimeters.

Tip of snout to—	
center of caudal fin (total length)	144.0
anterior margin of eye	11.8
lower end of nostril	8.0
angle of mouth	21.8
center of upper jaw	11.0
anterior base of pectoral	44.0
anterior base of dorsal	61.0
lower end of 1st gill-cleft	36.0

Length of 1st gill-cleft	12.0
Antero-posterior diameter of eye	2.9
Distance across head between eyes	10.2
Length of anterior border of pectoral	28.0
Height of dorsal	15.7
Anterior base of dorsal to anterior base of 2d dorsal	55.0
Anterior base of 2d dorsal to base of supracaudal	17.0
Length of supracaudal from dorsal pit	36.0
Length of infracaudal from ventral pit	27.0
Chord of caudal fin (tip to tip)	45.5
Greatest width of keeled peduncle	14.0

A portion of this shark's skin was tanned by the Ocean Leather Company, of New York, and it produced a high-grade, tough, pliable leather, capable of taking a pronounced gloss.

THE LARGE SHARKS OF CAPE LOOKOUT, NORTH CAROLINA. THE WHITE SHARK OR MANEATER, TIGER SHARK AND HAMMERHEAD.

RUSSELL J. COLES, DANVILLE, VA.

Plates 2 and 3.

In May, June and July, 1918, at Cape Lookout, North Carolina, I handled large numbers of sharks of many kinds for leather, food, oil and fertilizer, having established a shark-fishing station at that point now controlled by the Ocean Leather Company of New York, with which I am associated. The work was so intensive that it was impossible to make the scientific study of the material that I would have wished. It is perhaps true that sharks are well known in inverse ratio to their size, and my observations on those three species which attain the greatest dimensions are of greatest scientific interest.

Such notes as I was able to make I submitted to the Department of Ichthyology of The American Museum of Natural History, where Mr. John T. Nichols has given material aid in selection and arrangement of the matter contained in this article.